

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

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1. (currently amended) A computer implemented method of automatically generating a graph from report data, the method comprising the steps of:

identifying a report format as comprising at least one first group at a first level having at least one detail line with at least two data fields in each of the detail lines, wherein the first group further includes either a vertical total for each of a plurality of the respective data fields in the first group or a horizontal total for each of a plurality of the respective detail lines, with each particular vertical total totaling a corresponding data field for each detail line and with each particular horizontal total totaling each of the data fields for that particular detail line;

receiving a user input indicative of one of the totals; and

generating a graph using a predefined rule corresponding to the one of the totals indicated by the user input,

wherein the report format is hierarchical and further comprises a second group at a second level, each second group comprising one or more first groups, the second group including second group vertical totals, each second group vertical total aggregating all vertical totals for that data field for each first group in the second group.

2. (original) The computer implemented method according to claim 1, wherein the vertical totals are formed in a vertical total line.

3. (original) The computer implemented method according to claim 1, wherein the predefined rule corresponding to a particular one of the vertical totals includes using each different value that formed that particular vertical total to form a different feature in said graph.

4. (original) The computer implemented method according to claim 1, wherein the predefined rule corresponding to particular one of the horizontal totals includes using each different value that formed that particular detail line total to form a different feature in said graph.

5. (original) The computer implemented method according to claim 3, wherein each different feature is a separate display component in said graph displayed on a graphical display.

6. (original) The computer implemented method according to claim 4, wherein each different feature is a separate display component in said graph displayed on a graphical display.

7. (original) The computer implemented method according to claim 1, wherein both vertical totals and horizontal totals are included in the report.

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cont 8. (original) The computer implemented method according to claim 7, wherein the report format further comprises a cross total field that equals either the sum of the vertical totals or the sum of the horizontal totals.

9. (original) The computer implemented method according to claim 8, further comprising:  
receiving a user input indicative of one cross total field; and  
generating a graph using a predefined rule corresponding to that one cross total field.

10. (original) The computer implemented method according to claim 9, wherein the predefined rule corresponding to that one cross total field includes forming a different feature in said graph corresponding to either each vertical total or each horizontal total that formed said cross total field.

11. (original) The computer implemented method as defined in claim 10, wherein the predefined rule corresponding to that one cross total field includes forming a first and a second graphs, with a different feature in said first graph corresponding to each vertical total that formed said cross total field and with a different feature in said second graph corresponding to each horizontal total that formed said cross total field.

12. (canceled)

13. (currently amended) The computer implemented method according to claim ~~14~~<sup>11</sup>, wherein the second group vertical totals are formed in a line.

14. (currently amended) The computer implemented method according to claim ~~14~~<sup>11</sup>, further comprising:

receiving a user input indicative of one of the second group vertical totals; and  
generating a graph using a predefined rule corresponding to that one of the second group vertical totals.

15. (original) The computer implemented method according to claim 14, wherein the predefined rule corresponding to a particular one of the second group vertical totals includes using each different first group vertical total that formed that second group vertical total to form a separate feature on said graph.

16. (currently amended) The computer implemented method according to claim ~~1~~<sup>11</sup>, wherein each second group comprises at least two first groups.

17. (currently amended) The computer implemented method according to claim ~~1~~<sup>11</sup>, wherein the hierarchical report format further comprises a third group at a third level, each third group comprising one or more second groups, the third group including respective third group vertical totals, each third group vertical total aggregating all second group totals for that data field for each second group in the third group.

18. (original) The computer implemented method according to claim 17, wherein the third group vertical totals are formed in a line, and further comprising:

receiving a user input indicative of one of the third group vertical totals; and

generating a graph using a predefined rule corresponding to that one of the third group vertical totals.

19. (original) The computer implemented method according to claim 17, wherein the predefined rule corresponding to a particular one of the third group vertical totals includes using each second group vertical total that formed that third group vertical total to form a separate feature on said graph.

20. (original) The computer implemented method according to claim 1, wherein the received user input comprises clicking on a total.

21. (original) The computer implemented method according to in claim 1, wherein the received user input comprises clicking on a total area that is of a different color than other areas.

22. (currently amended) The computer implemented method ~~according to claims 3, of automatically generating a graph from report data, the method comprising the steps of:~~  
identifying a report format as comprising at least one first group at a first level having at least one detail line with at least two data fields in each of the detail lines, wherein the first group further includes either a vertical total for each of a plurality of the respective data fields in the first group or a horizontal total for each of a plurality of the respective detail lines, with each particular vertical total totaling a corresponding data field for each detail line and with each particular horizontal total totaling each of the data fields for that particular detail line;  
receiving a user input indicative of one of the totals; and  
generating a graph using a predefined rule corresponding to the one of the totals indicated by the user input,

wherein the predefined rule corresponding to a particular one of the vertical totals includes using each different value that formed that particular vertical total to form a different feature in said graph, and

wherein each of a plurality of the different features in said graph is linked to the corresponding different value used to form that feature, and wherein clicking on a feature displays the linked corresponding different value.

23. (currently amended) The computer implemented method ~~according to claim 4,~~ of automatically generating a graph from report data, the method comprising the steps of:

identifying a report format as comprising at least one first group at a first level having at least one detail line with at least two data fields in each of the detail lines, wherein the first group further includes either a vertical total for each of a plurality of the respective data fields in the first group or a horizontal total for each of a plurality of the respective detail lines, with each particular vertical total totaling a corresponding data field for each detail line and with each particular horizontal total totaling each of the data fields for that particular detail line;

receiving a user input indicative of one of the totals; and

generating a graph using a predefined rule corresponding to the one of the totals indicated by the user input,

wherein the predefined rule corresponding to particular one of the horizontal totals includes using each different value that formed that particular detail line total to form a different feature in said graph, and

wherein each of a plurality of the different features in said graph is linked to the corresponding different value used to form that feature, and wherein clicking on a feature displays the linked corresponding different value.

24. (original) The computer implemented method according to claim 22, wherein when a feature designation is received from a user, the report page containing the different value used to form that feature is displayed.

25. (original) The computer implemented method according to claim 24, wherein when the report page is displayed after receiving a designation of a feature, at least one value used to form the feature is displayed in a different manner relative to the other values on the report page.

26. (original) The computer implemented method according to claim 22, wherein when the report page is displayed after receiving a designation of a feature, links to other pages used to form the feature are included in the display.

27. (original) The computer implemented method according to claim 3, wherein when a feature in said graph is designated, a report page number containing the value used to form the designated feature is displayed.

a<sup>2</sup> 28. (currently amended) The computer implemented method according to claim 1, ~~wherein the report format is hierarchical and further comprises a second group at a second level, each second group comprising one or more first groups, the second group including second group vertical totals, each second group vertical total for a data field aggregating all vertical totals for that data field for each first group in the second group,~~ wherein the column location of vertical totals determines the column location of the data fields of all detail lines.

29. (original) The computer implemented method according to claim 17, wherein predetermined control break characters define the location of the first and any other subsequent hierarchical groups.

30. (currently amended) In a computer display system that displays a graph corresponding to report data, a method of displaying graph components comprising the steps of:

generating graph components corresponding to an identified report format comprising a first group at a first level having plural detail lines each having plural data fields and having either respective vertical total fields for each data field that totals that data field's values in

each of the detail lines or respective horizontal total fields for each detail line that totals all the data fields in one detail line;

highlighting either the vertical total fields or the horizontal total fields;

accepting user input only in the highlighted vertical total fields or the horizontal total fields; and

generating a graph based on user input in one of the highlighted vertical total fields or the horizontal total fields,

wherein the report format is hierarchical and further comprises a second group at a second level, each second group comprising one or more first groups, the second group including second group vertical totals, each second group vertical total aggregating all vertical totals for that data field for each first group in the second group.

31. (currently amended) A computer readable data storage medium having program code recorded thereon, that when executed, causes a computing system to automatically generate ~~for automatically generating~~ a graph from report data, the program code comprising:

a first program code that identifies a report format as comprising at least one first group at a first level having at least one detail line with at least two data fields in each of the detail lines, wherein the first group further includes either a vertical total line for each of a plurality of the respective data fields in the first group or a horizontal total for each of the plurality of the detail lines, with each particular horizontal total totaling each of the data fields for that particular detail line;

a second program code that receives user input indicative of one of the totals; and

a third program code that generates a graph using a predetermined rule corresponding to the one of the totals indicated by the user input,

wherein the report format is hierarchical and further comprises a second group at a second level, each second group comprising one or more first groups, the second group including second group vertical totals, each second group vertical total aggregating all vertical totals for that data field for each first group in the second group.

32. (original) The computer readable data storage medium according to claim 31, wherein the vertical totals are formed in a vertical total line.

33. (original) The computer readable data storage medium according to claim 31, wherein the predefined rule corresponding to a particular one of the vertical totals includes using each different value that formed that particular vertical total to form a different feature in said graph.

34. (original) The computer readable data storage medium according to claim 31, wherein the predefined rule corresponding to a particular one of the horizontal totals includes using each different value that formed that particular detail line total to form a different feature in said graph.

35. (original) The computer readable data storage medium according to claim 33, wherein each different feature is a separate display component in said graph displayed on a graphical display.

aj 36. (original) The computer readable data storage medium according to claim 34, wherein each different feature is a separate display component in said graph displayed on a graphical display.

37. (original) The computer readable data storage medium according to claim 31, wherein both vertical and horizontal totals are included in the report.


38. (original) The computer readable data storage medium according to claim 37, wherein the report format further comprises a cross total field that equals either the sum of the vertical totals or the sum of the horizontal totals.

39. (original) The computer readable data storage medium according to claim 38, wherein the second program code receives a user input indicative of one cross total field, and

wherein said third program code generates a graph using a predefined rule corresponding to that one cross total field.

40. (original) The computer readable data storage medium according to claim 39, wherein the predefined rule corresponding to that one cross total field includes forming a different feature in said graph corresponding to either each vertical total or each horizontal total that formed said cross total field.

41. (original) The computer readable data storage medium according to claim 40, wherein the predefined rule corresponding to that one cross total field includes forming a first and second graphs, with a different feature in said first graph corresponding to each vertical total that formed said cross total field and with a different feature in said second graph corresponding to each horizontal total that formed said cross total field.

 42. (canceled)

43. (currently amended) The computer readable data storage medium according to claim 31, wherein 42. ~~Wherein~~ the second group vertical totals are formed in a line.


44. (currently amended) The computer readable data storage medium according to claims 31 42, wherein the second program code is programmed to receive a user input indicative of one of the second group vertical totals, and the third program code is programmed to generate a graph using a predefined rule corresponding to that one of the second group vertical totals.

45. (original) The computer readable data storage medium according to claim 44, wherein the predefined rule corresponding to a particular one of the second group vertical totals includes using each different first group vertical total that formed that second group vertical total to form a separate feature on said graph.

46. (currently amended) The computer readable data storage medium according to claim 31 42, wherein each second group comprises at least two first groups.

47. (currently amended) The computer readable data storage medium according to claim 31 42, wherein the hierarchical report format further comprises a third group at a third level, each third group comprising one or more second groups, the third group including respective third group vertical totals, each third group vertical total aggregating all second group totals for that data field for each second group in the third group.

48. (original) The computer readable data storage medium according to claim 47, wherein the third group vertical totals are formed in a line, and wherein the second program code is programmed to receive a user input indicative of one of the third group vertical totals; and the third program code generates a graph using a predefined rule corresponding to that one of the third group vertical totals.

 49. (original) The computer readable data storage medium according to claim 47, wherein the predefined rule corresponding to a particular one of the third group vertical totals includes using each second group vertical total that formed that third group vertical total to form a separate feature on said graph.

50. (original) The computer readable data storage medium according to claim 31, wherein the received user input comprises clicking on a total.

51. (original) The computer readable data storage medium according to claim 31, wherein the received user input comprises clicking on a total area that is of different color than other areas.

52. (currently amended) The computer readable data storage medium according to ~~claim 33~~, having program code recorded thereon for automatically generating a graph from report data, the program code comprising:

a first program code that identifies a report format as comprising at least one first group at a first level having at least one detail line with at least two data fields in each of the detail lines, wherein the first group further includes either a vertical total line for each of a plurality of the respective data fields in the first group or a horizontal total for each of the plurality of the detail lines, with each particular horizontal total totaling each of the data fields for that particular detail line;

a second program code that receives user input indicative of one of the totals; and

a third program code that generates a graph using a predetermined rule corresponding to the one of the totals indicated by the user input,

wherein the predefined rule corresponding to a particular one of the vertical totals includes using each different value that formed that particular vertical total to form a different feature in said graph, and

wherein each of a plurality of the different features in said graph is linked to the corresponding different value used to form that feature, and wherein clicking on a feature displays the linked corresponding different value.

53. (currently amended) The computer readable data storage medium according to claim 34, having program code recorded thereon for automatically generating a graph from report data, the program code comprising:

a first program code that identifies a report format as comprising at least one first group at a first level having at least one detail line with at least two data fields in each of the detail lines, wherein the first group further includes either a vertical total line for each of a plurality of the respective data fields in the first group or a horizontal total for each of the plurality of the detail lines, with each particular horizontal total totaling each of the data fields for that particular detail line;

a second program code that receives user input indicative of one of the totals; and

a third program code that generates a graph using a predetermined rule corresponding to the one of the totals indicated by the user input,

wherein the predefined rule corresponding to a particular one of the horizontal totals includes using each different value that formed that particular detail line total to form a different feature in said graph, and

wherein each of a plurality of the different features in said graph is linked to the corresponding different value used to form that feature, and wherein clicking on a feature displays the linked corresponding different value.

54. (original) The computer readable data storage medium according to claim 52, wherein when a feature designation is received from a user, the report page containing the different value used to form that feature is displayed.

55. (original) The computer readable data storage medium according to claim 54, wherein when the report page is displayed after receiving a designation of a feature, at least one value used to form the feature is displayed in a different manner relative to other values on the report page.

56. (original) The computer readable data storage medium according to claim 52, wherein when the report page is displayed after receiving a designation of a feature, links to other pages used to form the feature are included in the display.

57. (original) The computer readable data storage medium according to claim 33, wherein when a feature in said graph is designated, a report page number containing the value used to form the designated feature is displayed.

58. (currently amended) The computer readable data storage medium according to claim 31, ~~wherein the report format is hierarchical and further comprises a second group at a second level, each second group comprising one or more first groups, the second group including second group vertical totals, each second group vertical total for a data field aggregating all vertical totals for that data field for each first group in the second group,~~

wherein the column location of vertical totals determines the column location of the data fields of all detail lines.

59. (original) The computer readable data storage medium according to claim 31, wherein predetermined control break characters define the location of the first and any subsequent hierarchical groups.

60. (currently amended) A system for automatically generating a graph from report data, the system comprising:

means for identifying and normalizing a report format as comprising at least one first group at a first level having at least one detail line with at least two data fields in each of the detail lines, wherein the first group further includes either a vertical total line for each of a plurality of the respective data fields in the first group or a horizontal total for each of the plurality of the detail lines, with each particular horizontal total totaling each of the data fields for that particular detail line;

user interaction means for receives a user input indicative of one of the total; and

a graph generator means for generating a graph by using a predefined rule corresponding to one of the totals indicated by the user input,

wherein the report format is hierarchical and further comprises a second group at a second level, each second group comprising one or more first groups, the second group including second group vertical totals, each second group vertical total aggregating all vertical totals for that data field for each first group in the second group.

61. (currently amended) A system for automatically generating a graph from report data, the system comprising:

a report unit that identifies a report format as comprising at least one first group at a first level having at least one detail line with at least two data fields in each of the detail lines, wherein the first group further includes either a vertical total line for each of a plurality of the respective data fields in the first group or a horizontal total for each of the plurality of the

detail lines, with each particular horizontal total totaling each of the data fields for that particular detail line;

a user interaction unit that receives a user input indicative of one of the total; and  
a graph generator that generates a graph by using a predefined rule corresponding to one of the totals indicated by the user input,

wherein the report format is hierarchical and further comprises a second group at a second level, each second group comprising one or more first groups, the second group including second group vertical totals, each second group vertical total aggregating all vertical totals for that data field for each first group in the second group.

62. (original) The computer implemented method according to claim 1, further comprising:

highlighting or changing in color the one of the totals indicated by the user input; and  
highlighting or changing in color data components that comprise the one of the totals indicated by the user input.

63. (currently amended) The computer implemented method ~~according to claim 1,~~  
of automatically generating a graph from report data, the method comprising the steps of:

identifying a report format as comprising at least one first group at a first level having at least one detail line with at least two data fields in each of the detail lines, wherein the first group further includes either a vertical total for each of a plurality of the respective data fields in the first group or a horizontal total for each of a plurality of the respective detail lines, with each particular vertical total totaling a corresponding data field for each detail line and with each particular horizontal total totaling each of the data fields for that particular detail line;

receiving a user input indicative of one of the totals; and  
generating a graph using a predefined rule corresponding to the one of the totals indicated by the user input,

wherein the step of generating a graph comprises:

extracting corresponding data for the one of the totals from a series of reports;  
and

generating a graph displaying a different feature for each of the extracted  
corresponding data.

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64. (original) The computer implemented method according to claim 63, wherein  
the series of reports represents a time series of a particular report.

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